

# SOIL SURVEYS

*can help you...*



## Recreation Planners



Natural Resources Conservation Service—Lakewood, Colorado

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## Recreation Planners

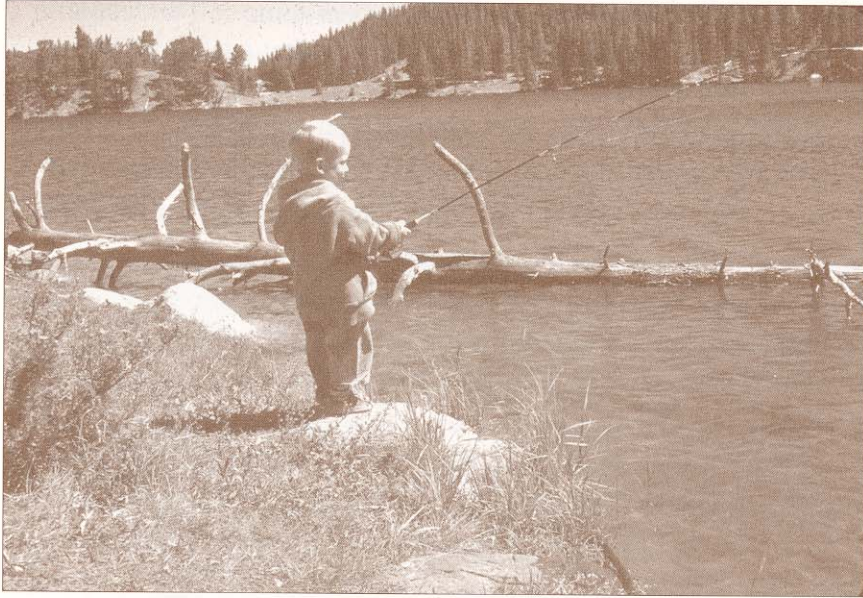
**M**ore ski resorts, dude ranches, camps, parks, picnic areas and other private and public recreation areas are needed to meet the growing demand for recreation. But just because recreation is “for fun” does not mean the selection and layout of areas can be haphazard. Soil suitability and limitations should be considered in planning recreation areas. This pamphlet tells how soil surveys available from the **Natural Resources Conservation Service (NRCS)** can help you select tracts suitable for recreation development and plan adequate conservation to ensure that the areas remain attractive and usable.

*Soil surveys can help you select, lay out and maintain areas for recreation.*



## Why are soil data needed?

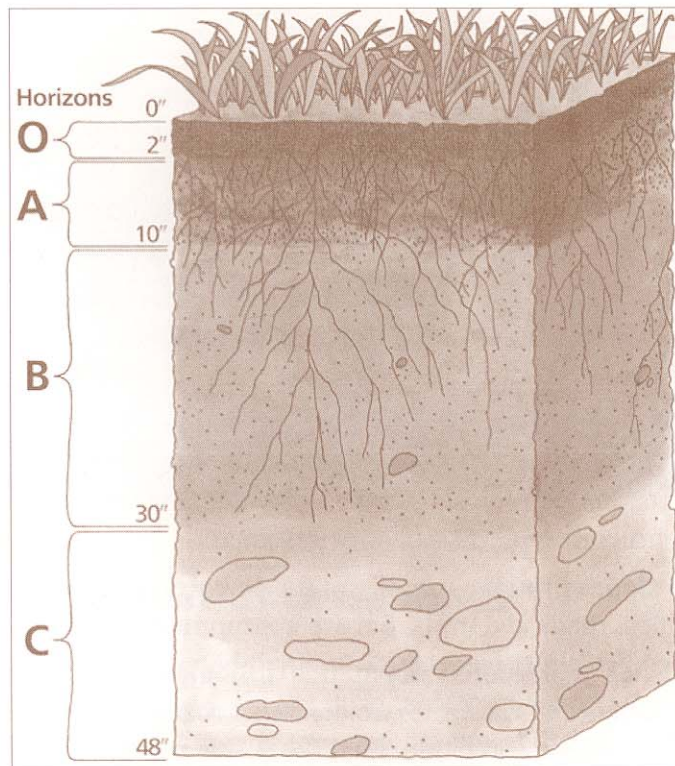
**I**t cannot be assumed that just any piece of land is suitable for recreation. Some soil is as unsuitable for recreation as for supporting buildings or growing oranges. Some soil properties that affect recreation uses are listed here.



*Demand for recreation areas is growing.*

- ◆ **Flood hazard** severely limits use of soil for camps and recreation buildings, but such soil is suitable for hiking and nature study and other less intensive uses.
- ◆ **High water tables** severely limit the use of soil for campsites, roads and trails, playgrounds, and picnic areas.
- ◆ **Droughtiness** makes it difficult to grow grass needed to prevent erosion, and droughty soil may require irrigating to maintain vegetation.
- ◆ Some clayey soil swells when wet and shrinks when dry. This **shrinking and swelling** may damage floors and foundations of recreation buildings. Such soil may not support roads and other structures unless specially designed.
- ◆ **Steep slopes** limit the use of soil for playgrounds, campsites, buildings, roads and trails, but are appropriate for hiking areas.
- ◆ If **bedrock** is at shallow depth, it is difficult to level soil for playgrounds and campsites, to construct roads and trails, and to establish vegetation. Shallow soil is poorly suited for uses that require extensive grading.

- ◆ A **clayey or sandy surface layer** makes some soil undesirable for playgrounds, campsites or other uses that accommodate heavy foot traffic.
- ◆ **Soil high in clay content** is sticky when wet and remain wet for long periods after rains. Loose, sandy soil is unstable and dusty when dry. Sandy loam and loam soil is the most suitable for recreation uses with heavy foot traffic.
- ◆ **Stones, gravel and rocks** impose moderate to severe limitations on use of soil for campsites, playgrounds, trails and other uses that will have heavy foot traffic.
- ◆ The **absorptive capacity** of soil determines whether a septic tank absorption field will work. The soil should be deep and permeable, there should be no seasonal high water table, the slope should not be steep, and there should be no danger of flooding.



*A soil profile*

Suitability for impounding water determines whether the soil can be used for man-made fishponds. Ponds are desirable for other recreation uses, such as shooting preserves, dude ranches, vacation farms, and wildlife and nature study areas. Soil suited to man-made ponds generally is deep, has low permeability when compacted, is not steep, and has a low susceptibility to piping.



*Soil surveys can help in selecting areas suitable for man-made ponds.*

### **How should you select a recreation area?**

**P**ublished soil surveys of many counties throughout the United States are available from **NRCS**. In each soil survey, the local soil is delineated on maps and its properties described. Soil surveys can help you select areas suitable for a wide range of recreation uses, including the following:

- ◆ Wetland refuges for waterfowl
- ◆ Wildlife management
- ◆ Open space or nature study areas
- ◆ Parks
- ◆ Athletic fields
- ◆ Ski areas
- ◆ Golf courses
- ◆ Campsites, hiking trails and picnic areas
- ◆ Dude ranches
- ◆ Woodlands
- ◆ Hunting reserves
- ◆ Man-made ponds



*Skiing may be seasonal, but conservation is needed year round.*

## **How should you maintain a recreation area?**

**F**or the manager of a ski resort, dude ranch, camp, park, picnic area, playground or other private or public recreation area, a soil survey can provide information necessary for planning a conservation program to protect the area against erosion and other kinds of site damage.

A soil survey can guide you in selecting a use for each area, based on the suitability of the soil. For example, soil that is susceptible to erosion can be planted to trees, shrubs and grasses and used in nonintensive ways, such as for nature study. Loamy, well-drained soil can be used for play areas and other uses that accommodate heavy foot traffic.

A soil survey also helps determine the kind of conservation measures needed to protect the soil while in use. Soil information, which for many years has helped farmers and ranchers prepare conservation plans, can also help a camp operator or manager of any recreation area. Vegetation adapted to the soil can be selected and planted to protect the soil from erosion. Dams, terraces, diversions, waterways and other mechanical measures to control water runoff can be installed in critical areas.

## **How can you get a soil survey?**

**T**o determine whether a soil survey of the area that interests you is available, call the local NRCS office. If the soil survey has not been published, you can arrange to look at maps that are completed. You may live in a conservation district where soil scientists and soil conservationists are available to discuss recreation use of soils with you.

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